

ADVANCED FIRTREE AND BROACH SLOT FORMS  
FOR TURBINE STAGE 1 AND 2 BUCKETS AND ROTOR WHEELS

ABSTRACT OF THE DISCLOSURE

A turbine bucket and wheelpost assembly reduces the  
5 number of buckets in at least one of the stages of the  
turbine from 92 to 60 while reducing stresses at the  
assembly points of the buckets and wheelposts. The buckets  
and wheelposts being formed with complementary fillets and  
tang that provide for the insertion of the bucket into the  
10 broach slot between two wheelposts. The angles of the tang  
surfaces on both the bucket and wheelpost range from  $50^\circ$  to  
 $57^\circ$ . The upper surface of the wheelpost is scalloped to  
reduce weight and the tangs and fillets of both the bucket  
and wheelpost are formed from curved and straight surfaces  
15 to reduce stresses on the assembly.